

**AMENDMENTS TO THE DRAWINGS**

The attached sheet of drawing includes changes to Figure 1. This sheet replaces the original sheet that included Figure 1. On the replacement sheet, the reference numeral 40 has been labeled, pursuant to paragraph [0017] of the specification, as requested by the Examiner. No new matter has been added.

**REMARKS**

In the Office Action, the Examiner rejected claims 1-30. By this paper, Applicants have amended Figure 1 and amended claims 2, 9, 16, 23, and 27 for clarification of certain features to expedite allowance of the present application. These amendments do not add any new matter. Upon entry of these amendments, claims 1-30 remain pending in the present application and are believed to be in condition for allowance. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration and allowance of all pending claims.

**Objection to the Drawings**

In the Office Action, the Examiner objected to the drawings “as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Server 40 from page 6, paragraph 0017.” Office Action, page 2. Applicants apologize for this drafting oversight. Accordingly, Applicants have attached a replacement drawing sheet for Fig. 1 that adds the omitted reference numeral 40 to Fig. 1. No new matter has been added. In view of the replacement drawing sheet, Applicants respectfully request that the Examiner withdraw the objection to the drawings.

**Claim Rejection Under 35 U.S.C. § 102(b)**

In the Office Action, the Examiner rejected claims 1-30 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,963,959 to Sun et al. (hereafter referred to as “the Sun reference”). Applicants respectfully traverse this rejection.

***Details of the Rejection***

Specifically, the Examiner stated:

With respect to claims 1, 5, 10, 19, 24, 28, Sun discloses A system that allows a table and a materialized view to be available while the materialized view is being refreshed, the system comprising:

**'a materialized view that is derived at least in part from a table'** as a snapshot that references a master table (col. 2, lines 24-27).

**'a refresh log that contains a plurality of entries, each of the plurality of entries corresponding to a change in the table'** as a snapshot log with a modification indication (col. 2 lines 35-45 and figures 7a-7e).

**'each of the plurality of entries comprising an epoch identifier'** as a refresh/modification timestamp (col. 2 lines 45-52 and figures 7a-7e). From the cited figures, a timestamp for each entry can be seen.

a refresh manager that performs a refresh operation on the materialized view in multiple steps by

**'(a) successively reading a first subset of the plurality of entries indicated by a specific epoch identifier from the refresh log'** as deriving a snapshot from a master table (col. 5, lines 33-45 and fig. 3).

**'(b) identifying a second subset of the plurality of entries from within the first subset of the plurality of entries, the second subset of the plurality of entries falling within a primary key value boundary'** as selecting primary key values PK1=:and...PKn=:n (col. 5, lines 46-62).

**'(c) applying the second subset of the plurality of entries to the materialized view'** as applying the appropriate refreshed rows to the snapshot table (col. 1, lines 35-40, and col. 5, lines 63-67).

With respect to claims 2, 7, 11, 20, 25, and 29, Sun discloses **'the corresponding epoch identifiers represent epoch numbers that have been created since a previous refresh operation on the materialized view'** as a modification timestamp (col. 2 lines 45-50 and figures 7a-7e).

With respect to claims 3, 6, 12 and 17, Sun discloses **'the second subset of the plurality of entries is applied to the materialized view in a primary key order'** as differences between snapshot and master table are reconciled based on primary key values (col. 2 lines 45-56).

With respect to claims 4, 8, 15, 22, 26, 30, Sun discloses **'the refresh manager is adapted to distinguish between entries of the second subset of the plurality of entries that have already been applied to the materialized view in previous transactions and entries of the second subset of the plurality of entries that have not been applied to the materialized view in the event of a failure of the refresh operation'** as updateable snapshot log 710 has an old/new column, OLD\$\$, which indicates whether a primary key value for the row is old ('O'), new ('N'), or unchanged (col. 8, lines 52-64).

With respect to claims 9, 16, 23, and 27, Sun discloses A system that provides availability of a table and a materialized view while the materialized view is being refreshed, the table being derived at least in part from the materialized view, the system comprising:

**a refresh log that contains a plurality of entries'** as a master log (col. 1, lines 30-37 and col. 2 lines 45-55).

**'a refresh manager that computes a table delta based on the refresh log and applies the table delta to the materialized view'** as in response to the refresh command, a refresh timestamp is generating and modification, timestamps are reset (col. 2, lines 45-54).

With respect to claims 13 and 18, Sun discloses **'the table delta is used to refresh the materialized view in multiple transactions'** as refresh timestamp is generated and modification timestamps are reset.

With respect to claims 14 and 21, Sun discloses **'recording the primary key value for each entry from the update log after that entry is applied to the materialized view'** as recording the primary key in a master log (col. 2, lines 30-33).

Office Action, pages 3-6 (emphasis in original).

### ***Legal Precedent***

Applicants, however, respectfully submit that the Sun reference does not anticipate the pending claims. Anticipation under Section 102 can be found only if a single reference

shows exactly what is claimed. *See Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir.1985). For a prior art reference to anticipate under Section 102, every element of the claimed invention must be identically shown in a single reference. *See In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir.1990). That is, the prior art reference must show the *identical invention* “in as complete detail as contained in the ... claim” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989) (emphasis added). Thus, for anticipation, the cited reference must not only disclose all of the recited features but must also disclose the *part-to-part relationships* between these features. *See Lindermann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 486 (Fed. Cir.1984). Accordingly, Applicants need only point to a single element or claimed relationship not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter. A *strict correspondence* between the claimed language and the cited reference must be established for a valid anticipation rejection.

Moreover, Applicants submit that, during patent examination, the pending claims must be given an interpretation that is *reasonable* and *consistent* with the specification. *See In re Prater*, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); *In re Morris*, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); see also M.P.E.P. § 2111 (describing the standards for claim interpretation during prosecution). Indeed, the *specification* is “the primary basis for construing the claims.” *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (citations omitted). It is usually dispositive. *See id.* Interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *See In re Cortright*, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); see also M.P.E.P. § 2111. That is, recitations of a claim must be read as they would be interpreted by those of ordinary skill in the art. *See Rexnord Corp. v. Laliram Corp.*, 60 U.S.P.Q.2d 1851, 1854 (Fed. Cir. 2001); see

also M.P.E.P. § 2111.01. In summary, an Examiner, during prosecution, must interpret a claim recitation as one of ordinary skill in the art would reasonably interpret the claim in view of the specification. See *In re American Academy of Science Tech Center*, 70 U.S.P.Q.2d 1827 (Fed. Cir. 2004).

***Independent Claims 1 and 5***

As an initial matter, Applicants respectfully assert that the Examiner's entire Section 102 rejection is improper because the Examiner's mapping of features from the Sun reference to the pending independent claims is logically inconsistent and contradictory. More specifically, as quoted above, the Examiner asserted in the rejection that "a snapshot that references a master table" from the Sun reference was equivalent to the claimed "materialized view that is derived at least in part from a table." Office Action, page 3. However, later in the same rejection, the Examiner asserts that "deriving a snapshot from a master table" from the Sun reference is equivalent to the claim feature of "successively reading a first subset of the plurality of entries indicated by a specific epoch identifier from the refresh log." Office Action, page 4.

These two positions are logically inconsistent and contradictory. On the one hand, the Examiner is alleging that the snapshot of the Sun reference is equivalent to the claim "materialized view" and the master table of the Sun reference is equivalent to the claimed "table" (*i.e.*, snapshot=materialized view and master table = table). Office Action, page 3. However, on the other hand, later *in the same rejection*, the Examiner alleges that the snapshot from the Sun reference is equivalent to "a first subset of the plurality of entries" and the master table from the Sun reference is equivalent to the claimed "refresh log" (*i.e.*,

snapshot = plurality of refresh log entries and master table = refresh log). Office Action, page 4.

Clearly, it is improper for the Examiner to apply a single feature from the Sun reference (*e.g.*, the snapshot 700) to anticipate multiple distinct features of the claims. Moreover, this mapping is also internally inconsistent within the rejection, because earlier in the Section 102 rejection the Examiner's mapped the claimed "refresh log" with the snapshot log of the Sun reference. Office Action, page 3. Clearly, the claimed "refresh log" cannot be both the updateable snapshot log 700 and the master table 200, as these two features are *distinct and separate features* of the Sun reference. *See* Figs. 2(a) = 2(e) and 7(a)-7(e). For at least this reason, Applicants respectfully assert that the pending Section 102 rejection is improper. Accordingly, Applicants respectfully request withdrawal of the pending Section 102 rejection and allowance of independent claims 1 and 5, as well as the claims that depend therefrom.

In addition, however, Applicants also respectfully assert that the Section 102 rejection is further logically inconsistent because the Sun reference simply does not contain each and every element recited in independent claims 1 and 5. For example, independent claims 1 and 5 recite "successfully reading a first subset of the plurality of entries indicated *by a specific epoch identifier from the refresh log.*" (Emphasis added). In the Office Action, the Examiner alleges that the "modification time stamp" disclosed in the Sun reference is equivalent to the above-recited claim feature. Office Action, page 4. This allegation, however, is clearly incorrect, as the present application illustrates a *clear difference between time stamps and epochs*. *See* Fig. 2; *see also* paragraph 0035. More specifically, Fig. 2 of the present application clearly indicates that epochs and timestamps are *separate and distinct* entities

(separate columns of the illustrated refresh log 100). *See also* paragraph 33 (explaining that, unlike timestamps, “epoch number may be used to identify a group of rows or records that have been added to the IUD log 100 since a previous refresh operation was performed”).

Accordingly, it is clear that the specification of the present application evidences a clear distinction between epochs and timestamps. In light of this clear distinction, Applicants respectfully remind the Examiner that the Federal Circuit recently held in *Phillips v. AWH Corp* that the *specification* is “the primary basis for construing the claims” and is usually dispositive. 415 F.3d 1303, 1315 (Fed. Cir. 2005). As such, the Examiner has an obligation to construe the claim term “epoch” in a manner consistent with the specification of the present application. *See id.* In such a proper construction, it is clear that the timestamps disclosed in the Sun reference are not equivalent to the claimed “epoch identifier.” For at this additional reason, Applicants respectfully assert that the Sun reference does not anticipate the above-recited features of independent claims 1 and 5. Accordingly, Applicants respectfully request withdrawal of the pending Section 102 rejection and allowance of independent claims 1 and 5, as well as the claims that depend therefrom.

***Independent Claims 9, 16, 23, and 27***

Applicants also respectfully assert that the Sun reference fails to anticipate several features of independent claims 9, 16, 23, and 27. For example, independent claims 9 and 23, as amended, recite “a refresh log that contains a plurality of entries, wherein the plurality of entries comprise *data that is being refreshed.*” (Emphasis added). Independent claim 16, as amended, recites “storing a plurality of entries corresponding to changes in the table in a refresh log wherein the plurality of entries comprise *data that is being refreshed.*” (Emphasis added). Independent claim 27, as amended, recites “a computer readable medium,



comprising ... a refresh log stored on the computer readable medium, the refresh log containing a plurality of entries, wherein one of the plurality of entries comprises *refreshable data associated with a materialized view*.” (Emphasis added).

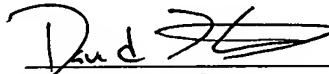
In sharp contrast, the Sun reference discloses an updatable snapshot log 710 that does not include data that is going to be refreshed. *See* Sun, Figs. 7(d) and 7(e); *see also* Sun, col. 8, lines 52-63. In particular, the Sun reference discloses tables containing exemplary zip code data that periodically needs to be refreshed between the master table 200 and the updateable snapshot 700. Sun, Figs. 2(a)-(e) and 7(a)-7(e). *See also* Sun, col. 2, lines 36-41. In other words, the illustrated zip code data is the data that is refreshed in the Sun reference. *See id.* This zip code data, however, is very clear *not part of the updateable snapshot log 710*, which the Examiner alleges to be equivalent to the claimed “refresh log.” Sun, Figs. 7(a)-7(e); *see also* Sun, col. 8, lines 52-64. Rather, the updatable snapshot log 710 includes only a primary key (CID), a time stamp (TIME\$\$), an old/new column indicator (OLD\$\$), and a modification type indicator (MOD\$\$). *Id.* None of this data types are included in the updateable snapshot 700 except the primary key, and the primary key is never refreshed, as it stays constant. *See id.* In other words, none of the data included in the snapshot log 710 of the Sun reference is ever refreshed. As such, Applicants respectfully assert that the Sun reference does not anticipate the above-recited features of independent claims 9, 16, 23, and 27, as amended. Moreover, as described above, Applicants also respectfully assert that the Section 102 rejection, as a whole, is improper, because the rejection itself is logically inconsistent. For each of these reasons, Applicants respectfully request withdrawal of the pending Section 102 rejection and allowance of independent 9, 16, 23, and 27, as well as the claims that depend therefrom.

**Conclusion**

Applicants respectfully submit that all pending claims should be in condition for allowance. However, if the Examiner wishes to resolve any other issues by way of a telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

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Attachment: Replacement Drawing Sheet